



Australian Government

MSFFDM5005 Design product suitable for mass production

Release: 1

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Modification History

Release 1. Unit code and title changed. Application changed. Elements and Performance Criteria changed and updated to active voice. Range of Conditions removed and relevant information moved to Assessment Requirements. Assessment Requirements changed to remove duplication with Performance Criteria. Supersedes and is not equivalent to MSFFDT5012 Design for mass production.

Application

This unit describes the skills and knowledge required to design products suitable for mass production in a furniture-making or similar operation. It includes the considerations required to review and adapt a design brief, specify equipment requirements and personnel capabilities, identify cost-effective opportunities and plan for future production runs.

This unit applies to individuals working in a manufacturing or design studio environment who design products with production methods as a consideration, working either alone or as part of an internal or external team.

No licensing or certification requirements apply to this unit at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Competency Field

Design practice

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan for design	1.1 Review, confirm and clarify elements of furniture design brief with appropriate personnel and client 1.2 Establish and maintain communication with relevant personnel in accordance with workplace processes 1.3 Address and verify any problems or underlying factors raised by design brief in terms of adaption to mass production 1.4 Identify featured elements of design from design brief 1.5 Identify featured principles of design from design brief 1.6 Set and cost volumes of mass production runs and evaluate these

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<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	against identified intended market
2. Design for mass production	2.1 Review concepts for proposed adaption of design brief in context of mass furniture production requirements 2.2 Present and review different solutions to satisfy requirements of design brief 2.3 Review sample maquette and prototypes against concept sketches 2.4 Review and compile final working drawings and specifications in readiness for mass production 2.5 Design concept for mass manufacture, considering available equipment and resources and other variables
3. Evaluate production requirements for mass production	3.1 Review and assess equipment capabilities and modify design brief based on available or obtainable equipment 3.2 Review and assess personnel capabilities and modify design brief based on assessed and available skills 3.3 Assess material or resource supply chain to workplace, set stock sizes and modify design brief based on availability of resources 3.4 Assess and review outsourcing opportunities using cost–benefit analysis 3.5 Review workflow methods, including consideration of work health and safety, and amend design brief or workflow methods to cater for mass production 3.6 Research and implement opportunities for innovation in mass production procedures in accordance with workplace procedures
4. Implement design	4.1 Plan and organise manufacturing process, considering available equipment and resources and workplace procedures 4.2 Process material in accordance with manufacturing plan and work health and safety regulations 4.3 Produce jigs to assist with manufacturing components in accordance with work requirements 4.4 Produce components and prepare for assembly in accordance with workplace procedures 4.5 Assemble components based on working drawings

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
5. Finalise mass production	5.1 Finish final product in accordance with specifications 5.2 Evaluate final product for functionality and aesthetic appeal against design brief 5.3 Review mass production methodology in accordance with workplace procedures 5.4 Package and dispatch production run products in accordance with enterprise transport methods 5.5 Record and report on product anomalies resulting from mass production anomalies to appropriate personnel and in accordance with workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in performance criteria.

- Numeracy skills to interpret technical and production information.
- Reading skills to interpret design briefs.
- Writing and oral communication skills to produce or adapt design briefs and document and present manufacturing information.

Other foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Release 1. Supersedes and is not equivalent to MSFFDT5012 Design for mass production.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFFDM5005 Design product suitable for mass production

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- successfully design, or redesign, products suitable for mass production for one major and two minor projects, and in doing so:
 - apply research, analytical and mathematical skills to the identification and selection of materials and the selection of appropriate production and construction techniques for products
 - create innovative designs that satisfy the agreed parameters and consider, but are not limited by, other historical or contemporary influences
 - prepare and work through a design brief taking into account the requirements of mass production to fulfil the design brief and oversee a mass production run
 - review information provided and creatively generate proposals for a furnishing or similar product
 - apply elements and principles of design to designing for mass production in accordance with a design brief
 - evaluate the variations in costs associated with different production methods and production runs of different sizes.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- workplace and site standards, requirements, policies and procedures for designing for mass production
- environmental protection requirements
- established communication channels and protocols
- relevant problem identification and resolution
- elements and principles of design and their relationship with mass production practices, including:
 - ergonomics and aesthetic values
- supply chain management

- approaches to outsourcing arrangements
- cost–benefit analysis methods
- workplace resource audit techniques
- types of tools and equipment and procedures for their safe use, operation and maintenance
- characteristics of materials, products and defects and their relevance in a mass production environment
- set-up and operation of furniture-making and related equipment
- relevant computer programs, software and digital communication tools
- product machining, assembly and finishing techniques
- sketching and drawing techniques
- storage systems and labelling relating to the packaging and dispatch of mass-produced items
- procedures for the recording, reporting and maintenance of workplace records and information
- appropriate mathematical procedures for estimation and measurement.
- work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self or others
 - prevent damage to goods, equipment and products
 - maintain required production output and product quality.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - access to mass production operations facilities and/or personnel
 - design software that reflects current industry standards

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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